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10/572,944	10/13/2006	Christophe Fringant	287782US0PCT	3153
22850	7590	09/19/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.			TREIDL, JESSICA I	
1940 DUKE STREET			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314			1796	
NOTIFICATION DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/572,944	<b>Applicant(s)</b> FRINGANT ET AL.
	<b>Examiner</b> JESSICA TREIDL	<b>Art Unit</b> 1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 March 2006.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 13-27 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 13-27 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 22 March 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-166/08)  
 Paper No(s)/Mail Date 06/16/2006

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Specification***

The disclosure is objected to because of the following informalities: the specification is missing a brief description of the several views of the drawings section. Appropriate correction is required.

***Information Disclosure Statement***

The information disclosure statement filed 06/16/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. Although an English abstract for foreign patent document SU 420635 was provided, copies of foreign patent documents of JP 61-051068 and SU 420635 were not provided. It has been placed in the application file, but the information referred to therein has not been considered.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16, 23, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 16, although the polymer P1 is limited to be a vinylidene chloride polymer, it is unclear if M1 is resultantly a vinylidene chloride. For the purposes of examination the limitation will be interpreted to mean wherein M1 is vinylidene chloride.

Regarding claim 23, the phrase "prepared by means of the polymer composition" is unclear. For the purposes of examination the limitation will be interpreted to mean an article comprising the composition.

Regarding claim 27, the phrase "forming the object with the composition" is unclear. For the purposes of examination the limitation will be interpreted to mean forming the object, wherein the object comprises the composition.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-17 and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Demol et al (US 3,476,587).

Regarding claims 13-17, Demol et al teach a composition comprising two vinylidene chloride copolymers, one characterized as "hard" {polymer P1} the other "supple" {co-oligomer O1}. The reference teaches the "hard" vinylidene chloride

copolymer comprising a vinylidene chloride and another comonomer wherein the weight ratio is between 4 to 49 {comprising at least 50 % by weight of monomeric units derived from an ethylenically unsaturated monomer M1 (wherein that monomer is vinylidene chloride)} (2:25-30). Furthermore the reference teaches the "supple" vinylidene chloride copolymer comprising vinylidene chloride {at least one monomeric unit identical to that derived from the monomer M1} and other comonomers such as esters of unsaturated monocarboxylic acids {monomeric unit (M2) derived from an ethylenically unsaturated monomer carrying an -COOH group} (2:42-58).

Regarding claim 21, Demol et al teach mixing the aqueous emulsions of the copolymers {mixing of the dispersions of co-oligomer(s) (O1) in an aqueous dispersion of the polymer (P1)} (3:30-35).

Regarding claim 22, Demol et al teach mixing the copolymers and then coating them on a support in one or several layers {coated onto to said surfaces} (3:30-34), wherein said surfaces are paper, other wood products, leather, fabrics, rubber, cellophane and plastics {polymer, paper or cellophane surfaces} (2:6-15).

Regarding claim 23, Demol et al teach a piece of craft paper with two coatings layers applied to (3:50-51).

Regarding claims 24 and 25, Demol et al teach the composition being a coating applied to a substrate (1:12-17), wherein the substrate is paper, other wood products, leather, fabrics, rubber, cellophane and plastics (2:6-15)

Regarding claim 26, Demol et al teach applying two coating layers {multi-layer films} to craft paper (3:50-51).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demol et al (US 3,476,587) as applied to claim 13 above, and in view of Waldmann et al (US 4,100,340).

Regarding claims 18 and 19, Demol et al teach the basic claimed composition [as set forth above with respect to claim 13]. Additionally, Demol et al teach the composition to impart water impermeability and impermeability to water vapor, gases greases, oil etc. for various types of substrates (1:12-17, 20-25, 45-53) such as paper, other wood products, leather, fabrics, rubber, cellophane and plastics (2:6-15).

Demol et al do not teach the vinylidene chloride co-polymer wherein it contains a monomeric unit derived from an ethylenically unsaturated monomer carrying  $-(CH_2)_b-C_6F_{2c+1}$  with b between 1 and 11 and c greater than or equal to 5 [instant claims 18 and

19]. However, Waldmann et al teach solutions of novel copolymers (2:59-64), wherein the copolymers comprise at least a perfluoroalkylethyl acrylate and a vinylidene chloride (1:36-46). Furthermore, the reference teaches a copolymer wherein it comprises  $C_nF_{2n+1}CH_2CH_2OCOCH=CH_2$  (where n is 6, 8, 10, 12, 14) {a monomeric unit derived from an ethylenically unsaturated monomer carrying  $-(CH_2)_b-C_cF_{2c+1}$  with b between 1 and 11 and c greater than or equal to 5} and vinylidene chloride (Example 1, 3:1-10) {O1 of instant claims 18-19}. Waldmann et al teach that the composition produces excellent oil and water repellent finishes (1:44), can be applied to wood, paper, plastics, fabrics and leather (2:57-64) and additionally is compatible with perchloroethylene on porous material especially textiles (1:45-46). Demol et al and Waldmann et al are analogous art because they are concerned with the same field of endeavor, namely water/oil repellent compositions comprising solutions of vinylidene chloride co-polymers. At the time of invention a person of ordinary skill in the art would have found it obvious to have added a vinylidene chloride copolymer containing the perfluoroalkylethyl acrylate monomeric unit {O1 of instant claims 18-19}, as taught by Waldmann et al, to the composition of Demol et al and would have been motivated to do so since Waldmann et al suggest that the copolymer would provide further water/oil repellency properties (1:44) and compatibility with perchloroethylene, a solvent frequently used on porous material especially textiles (1:45-46).

Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demol et al (US 3,476,587) as applied to claim 13 above, and in view of Messwarb et al (US 2,971,948).

Regarding claims 18 and 20, Demol et al teach the basic claimed composition [as set forth above with respect to claim 13]. Additionally, Demol et al teach the composition to impart water impermeability and impermeability to water vapor, gases greases, oil etc. for various types of substrates (1:12-17, 20-25, 45-53) such as paper, other wood products, leather, fabrics, rubber, cellophane and plastics (2:6-15).

Demol et al do not teach the vinylidene chloride co-polymer wherein it contains a monomeric unit derived from an ethylenically unsaturated monomer carrying the phosphonate group  $-\text{PO}(\text{OH})(\text{OR}_1)$  wherein  $\text{R}_1$  is a H or an alkyl radial containing from 1 to 11 carbons [instant claims 18 and 19]. However, Messwarb et al teach copolymers for lacquer products that have good adhesion to metal surfaces (1:16-22; 2:7-11). Furthermore the reference teaches the copolymer comprising a monomeric unit of the formula  $-\text{CH}_2\text{CHPO}(\text{X})\text{OR}$  wherein X is OH and R is alkyl group containing 1-4 carbon atoms (1:59-2:7) {at least one monomeric units derived from an ethylenically unsaturated monomer, carrying the phosphonate group  $-\text{PO}(\text{OH})(\text{OR}_1)$  wherein  $\text{R}_1$  is a H or an alkyl radial containing from 1 to 11 carbons}, vinyl chloride and comonomers such as vinylidene chloride (1:59-2:7) {O1 of instant claims 18, 20}. Though the reference does not teach an embodiment wherein the co-polymer contains vinylidene chloride, it teaches vinylidene chloride as one of approximately 10 specified co-monomers and would have been obvious to try for one of ordinary skill in the art. Demol et al and Messwarb et al are analogous art because they are concerned with the same field of endeavor, namely vinyl and chloride containing polymer based coating compositions. At the time of invention a person of ordinary skill in the art would have

found it obvious to have added a vinylidene chloride copolymer containing the vinyl phosphonic acid group {O1 of instant claims 18, 20}, as taught by Messwarb et al, to the composition of Demol et al and would have been motivated to do so since Messwarb et al suggest the vinyl phosphonic acid group lends the coating composition good adhesion to metals (1:16-22; 2:7-11), thereby expanding the various substrates the coating composition of Demol et al can be applied to and increasing its utility.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Demol et al (US 3,476,587) as applied to claim 13 above, and in view of Sun et al (US 5,001,192).

Regarding claim 27, Demol et al teach the basic claimed composition [as set forth above with respect to claim 13]. Demol et al teach applying the composition as a coating and forming layers or laminates with it (3:35-41). Additionally Demol et al teach the "hard" vinylidene chloride copolymer providing high impermeability but is hard and brittle (2:36-41), while the "supple" vinylidene chloride copolymer provides lower impermeability but is more resistant to manipulation (2:58-65).

Demol et al do not teach a method of forming a molded object comprising forming the object with the composition [instant claim 27]. However, Sun et al teaches a polymeric polyblend comprising a vinylidene chloride copolymer comprising 60 to about 98 wt % vinylidene chloride, a vinyl chloride copolymer, and a compatibilizing polymer to help the two better blend (1:40-2:12, 3:53-59, 4:24-50). Furthermore, the reference teaches the vinylidene chloride copolymer having a semi-crystalline character (2:37-50),

and the polyvinyl copolymer improving the impact resistance (3:29-33). Lastly, the reference discloses using the composition to form films {coatings} or other articles, prepared by various techniques including molding techniques (10:25-31). Demol et al and Sun et al are analogous art because they are concerned with the same field of endeavor, namely blends of a brittle more crystalline vinyl/chloride based copolymer and a more supple/manipulation resistant vinyl/chloride based copolymer to create water proof coatings/objects. At the time of invention a person of ordinary skill in the art would have found it obvious to have used the composition of Demol et al to form molded objects, as taught by Sun et al, and would have been motivated to do so since forming molded objects in addition to a variety of coatings would increase the utility, functionality and marketability of the composition.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA TREIDL whose telephone number is (571)270-3993. The examiner can normally be reached on Monday- Thursday, 7:30AM- 5PM EST, Alt. Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./  
Supervisory Patent Examiner, Art Unit 1796  
15-Sep-08

/J.T./  
/9.3.08/